

Editorials

The Value of the History and Physical for Shoulder Pain

ALTHOUGH SOPHISTICATED imaging techniques aid in the visualization of the musculoskeletal system, most disorders about the shoulder girdle can be diagnosed by a simple yet thorough history and physical examination.¹ High-powered investigative aids more often confirm an established diagnosis rather than identify an unknown primary diagnosis. The basic skills of the history and physical examination are often overlooked, placing an excessive dependence on technology. This becomes glaringly obvious as more patients present to the specialist's office with a magnetic resonance image (MRI) even before plain radiographs have been taken.

The key to the successful treatment of any shoulder problem is an accurate diagnosis. Several factors in the history play a major role in formulating the diagnosis and will therefore immediately guide a physician in the appropriate direction. Age, the chief complaint, and the mechanism of injury are invaluable in the diagnostic process. The history should be patterned so as to exclude the presence of referred pain, infection, or tumor. It is important to remember that the evaluation of the shoulder begins with the cervical spine because this is a common source of local referred pain and the symptom complexes of these two areas often overlap. Pain that is duplicated by range of motion or manipulation of the neck is of cervical origin despite the fact that it may be perceived about the shoulder. Pain of a radicular nature such as this often produces a pain-free examination of the shoulder. Hand dominance, occupation, and aggravating and alleviating factors are also of utmost importance. Because pain is the most common reason people seek medical attention, obtaining specific details regarding its nature, duration, and onset is helpful.

As in other areas of medicine, different orthopedic disorders afflict different age groups. The most common cause of anterior shoulder pain in those older than 40 years is impingement. Impingement is most commonly caused by narrowing of the outlet formed by the acromion, coracoacromial ligament, and the acromioclavicular joint, resulting in encroachment on the underlying rotator cuff tendons.² Typically patients will have pain on overhead elevation and internal rotation maneuvers, such as putting the arm in a shirt or coat sleeve or attempting to fasten a brassiere. The pain has an insidious onset, with exacerbation at night preventing or disturbing sleep. The findings of the physical examination are notable for pain with forced forward elevation (the Neer impingement sign) that is alleviated by the subacromial administration of lidocaine. Even before plain radiographs, we now have a confirmed diagnosis. Based on the duration of symptoms, the age of the patient, and failed previous methods, the decision can be made as to whether or not further diagnostic studies are warranted. Advanced imaging of the

rotator cuff would therefore confirm an already established diagnosis of impingement, in addition to elaborating on the extent of cuff damage, such as tendinitis versus complete tendon tear, each of which often take different therapeutic paths.

Instability is the second most common symptom in the shoulder and tends to be a disease of the young as compared with those suffering from rotator cuff tears, whose average age is 55 to 60 years. The instability, traumatic or atraumatic, may be vague in its presentation or readily described as "slipping out of the joint." Patients have pain and an unsettling feeling most commonly with abduction and external rotation, such as in the cocking phase of throwing, indicative of anterior instability. Inferior and posterior instability are also seen, presenting with symptoms such as difficulty carrying packages at the side (inferior) or pushing through a revolving door with arms out in front (posterior). The findings of a physical examination are remarkable for apprehension or guarding in positions that stress the direction of instability. General ligamentous laxity may be present, but not necessarily so. A complete neurologic examination is warranted because of the possibility of associated nerve injury. The axillary nerve is most commonly involved, resulting in decreased sensation over the lateral upper arm with deltoid weakness. Again, the diagnosis is made before imaging. Plain radiographs can confirm the diagnosis by the presence of a Hill-Sachs or reverse Hill-Sachs lesion indicative of anterior or posterior instability, respectively. To visualize the glenohumeral articulation adequately, it is imperative that at least a trauma series, consisting of scapular anteroposterior (AP) and lateral views in addition to an axillary view, be taken. The axillary view is the single most important view to assess the articulation and to confirm dislocation and reduction.³ Posterior dislocations are still missed in as many as 80% of cases at the initial evaluation, which is often a direct result of inadequate or absent axillary radiographs. Patients with this disorder present classically with the arm locked in internal rotation with an inability to abduct or externally rotate. It may have resulted from seizure, electrocution, direct trauma, or a fall onto an outstretched, forward-flexed arm. Whatever the cause, it is here that a complete set of radiographs plays a most vital role.

Arthritis about the shoulder girdle is primarily a disorder of an older population. A possible exception is that of acromioclavicular arthritis, which may be seen in younger patients who do heavy labor, those who carry objects on the shoulder such as carpenters, and weight lifters. Acromioclavicular inflammation or arthritis presents with a history of pain over the top of the shoulder, sometimes associated with swelling. On physical examination, pain is elicited on cross-chest adduction and internal rotation, both of which compress the joint. There is point tenderness over the acromioclavicular joint. This classic history and physical finding is essentially pathognomonic for acromioclavicular joint disorder. Plain acromioclavicular

joint and axillary radiographs can confirm joint narrowing, osteophytes, or distal clavicular resorption, as seen in osteolysis or weight lifter's shoulder.

Glenohumeral osteoarthritis often presents with a slow, progressive onset of pain over an extended period of time, with less intense night pain than with rotator cuff disorders, but possibly a more substantial loss of motion, especially external rotation and overhead elevation. On examination, it is not uncommon to observe other joint involvement such as Heberden's nodes or hip and knee symptoms. Active range of motion displays audible or palpable crepitus, which is the unmistakable sound of "bone on bone." Rotational AP views, scapular lateral, and axillary radiographs typically reveal a loss of joint space, marginal osteophytes, and subchondral sclerosis. Unless there is some question regarding the quantity and quality of glenoid bone stock, rotator cuff integrity, or infection, it is rare to require further imaging to devise a treatment plan.

Acute trauma to the shoulder resulting in fracture presents with the typical scenario of pain, swelling, ecchymosis, and possibly deformity. It does not pose a major diagnostic dilemma, but it is of utmost importance not to overlook associated osseous, soft tissue, and neurovascular injuries. In this situation, accurate fracture classification is entirely dependent on adequate plain radiographs. The most widely accepted classification of proximal humeral fractures is based on displacement of the anatomic and surgical neck and greater and lesser tuberosity fragments.⁴ To treat these injuries, all four fragments must be identified radiographically. Most of these injuries can be diagnosed with plain radiographs consisting of at least a trauma series. Additional oblique radiographs can be helpful, but the addition of computed tomographic (CT) scanning to further delineate fracture fragments has not been found to appreciably change the diagnosis made on plain films. About 80% to 85% of proximal humerus fractures are minimally displaced and can be treated without surgery. Some two-part fractures are amenable to closed reduction, but the more unstable and comminuted injuries will require techniques ranging from open reduction and internal fixation to proximal humerus replacement.⁵

In conclusion, most shoulder disorders, be they chronic pain, instability, arthritis, or the result of acute trauma, can be diagnosed by a thorough history, physical examination, and plain radiographs without further advanced imaging techniques. Clearly, MRI, ultrasonography, CT arthrography, and other investigative aids have an important role in more clearly delineating the disorder in routine and not so routine cases, and their use should not be abandoned. Their judicious use is probably more beneficial to the system as a whole, including the patient. The fine art of the history and physical is still worth its weight in gold.

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Cure, Conservation, Confusion, Chaos

Her agony came from the fact that mastectomy would be curative, and it was hard to turn that down. A lesser procedure, while preserving her breast and her femininity, offered her somewhat less chance for a complete cure—but exactly how much less was unknown. Perhaps only a small amount less. It didn't seem worth losing her breast for a few percentage points.

Yet, maybe it was. It was the most difficult decision of her life. But medicine had failed her. The data upon which to base her judgment was weak, and we had shifted the burden of that judgment to her.¹

THE ABOVE PARAGRAPH was written in 1991 about a woman with ductal carcinoma in situ (DCIS) of the breast and her difficult journey through the medical system as she searched for the "right" treatment. There were a number of "right" treatments then for her particular form of carcinoma, but each was flawed in some way, confounding her thoughts, making her decision more difficult. But that was 1991; it is now 1995, and we know more about DCIS. But is the decision-making process any easier?

During my five-year surgical residency in Boston in the 1960s, I never saw a case of DCIS, and I have no recollection of ever hearing of it during my training. If a patient with this type of cancer had presented at that time, she would have been treated with a mastectomy just like any other patient with breast cancer. During the 1960s, to most physicians, breast cancer was breast cancer. It was all the same, unless you were a specialist in diseases of the breast—and there were few of those.

The most prominent textbook of the time devoted solely to breast disease was written by Haagensen.² He defined intraductal breast cancer as a lesion that appeared to grow predominantly within the mammary ducts. That meant that a substantial proportion of the lesion, as much as 49%, could be invasive. Haagensen treated the lesion, like any other invasive cancer, with radical mastectomy. He reported that the average lesion measured 47 mm and that 62% of his patients with intraductal carcinoma had metastases to axillary lymph nodes.²

During the past 30 years, there have been tremendous changes in the diagnosis, treatment, and our understanding of breast cancer biology. Ductal carcinoma in situ is now defined as being wholly intraductal without any invasion. Instead of a clinical rarity presenting as a mass or nipple discharge, DCIS is now common, generally non-